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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/820,702

03/30/2001

Kyoung Sub Kim

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EXAMINER

DUONG, THOI V

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 10/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/820,702

Applicant(s)

KIM, KYOUNG SUB

Examiner

Thoi V Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2004.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 ~~is/are~~ pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-18 ~~is/are~~ rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 17, 2004 has been entered.

Accordingly, claims 1, 7 and 12 were amended. Currently, claims 1-18 are pending in this application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (Fig. 2) in view of Plesinger (USPN 5,146,354).

Re claims 1 and 7, as shown in Fig. 2, Applicant's Prior Art discloses a liquid crystal display (LCD) device, comprising:

a liquid crystal panel 2;

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a backlight assembly arranged with the main frame for radiating light onto the liquid crystal panel, comprising: a lamp (light source) 20, a lamp housing 18, and a light guide 6;

optical sheets 4 on the backlight assembly; and

a panel guide 12 provided between the backlight assembly and the liquid crystal panel to support the liquid crystal panel.

Re claim 5, the LCD device further comprises:

a main frame 14 to which the backlight assembly is secured;

a printed circuit board 8 installed under the main frame;

a tape carrier package 22 mounted with drive integrated circuits for driving the liquid crystal panel and installed between the liquid crystal panel and the printed circuit board;

a top case 16 for surrounding the upper edge of the liquid crystal panel and the side of the main frame; and

a bottom case installed under the printed circuit board and having one side assembled in such a manner to overlap with the top case.

Applicant's Prior Art discloses a LCD device that is basically the same as that recited in claims 1 and 7 except for a pad provided between the panel guide and the backlight assembly, and offset and discontinuous from the light source and maintaining a distance between the panel guide and the backlight assembly.

As shown in Figs. 2 and 3, Plesinger discloses a LCD device comprising a (first) pad 146 made of a heat insulating material and provided between a backlight assembly

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comprising a light guide 104 and a light source 100, and a panel guide 118 for preventing heat from radiating from a lamp 100 to a liquid crystal panel 112, wherein the pad is offset and discontiguous from the light source 100 by a heat insulating material 110 and a heat-fin member 144, and maintains a distance between the panel guide as shown in Figs. 3 and 5 (col. 4, line 54 through col. 5, line 13).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LCD device of Applicant's Prior Art with the teaching of Plesinger by forming a heat insulating pad provided between the panel guide and the backlight assembly for preventing heat from radiating from the light source to the liquid crystal panel and also separating the liquid crystal panel and the optical sheets from the light source so as to obtain a display system with uniform brightness of the viewing area (col. 2, lines 5-7).

4. Claims 6 and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (Fig. 2) in view of Plesinger (USPN 5,146,354) as applied to claims 1, 5 and 7 above and further in view of Kawano et al. (USPN 6,195,141 B1).

The LCD of Applicant's Prior Art (Fig. 2) as modified in view of Plesinger above includes all that is recited in claims 6 and 8-11 except second and third pads formed on both sides of the printed circuit board.

As shown in Fig. 3, Kawano discloses a LCD device comprising a liquid crystal panel 7 and a printed circuit board 6 which is securely held between a lower cover 14 and an upper cover 17 through buffer members 20. Kawano teaches that the buffer members are made of elastic material to prevent shock impact from damaging the

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connection between the printed circuit board and the liquid crystal panel, and hence the contents of display can be surely display on the liquid crystal panel (col. 2, lines 19-28; col. 3, lines 41-44).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the LCD device of Applicant's Prior Art with the teaching of Kawano by forming a second silicon pad provided between the main frame and the printed circuit board to maintain a distance between the main frame and the printed circuit board and a third silicon pad provided between the printed circuit board and the bottom case to maintain a distance between the printed circuit board and the bottom case so as to secure the printed circuit board in place and also prevent shock from affecting display quality (col. 2, lines 19-28).

5. Claims 12, 13, 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (Fig. 2) in view of Muramatsu et al. (USPN 5,703,665).

Re claim 12, as shown in Fig. 2, Applicant's Prior art discloses a liquid crystal display device, comprising:

- a liquid crystal panel 2;

- a backlight assembly for radiating a light onto the liquid crystal panel, said backlight assembly having a light source 20;

- optical sheets 4 on the backlight assembly; and

- a panel guide 12 provided between the backlight assembly and the liquid crystal panel to support the liquid crystal panel,

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Re claim 16, the liquid crystal display device further comprises:

a main frame 14 to which the backlight assembly is secured;

a printed circuit board 8 installed under the main frame;

a tape carrier package mounted with drive intergrated circuits 22 for driving the liquid crystal panel and installed between the liquid crystal panel and the printed circuit board;

a top case 16 for surrounding the upper edge of the liquid crystal panel and the side of the main frame; and

a bottom case 10 installed under the printed circuit board and having one side assembled in such a manner to overlap with the top case,

wherein, re claim 18, a distance between the panel guide and the backlight assembly is approximately 0.4 mm.

Applicant's Prior Art discloses a liquid crystal display device that is basically the same as that recited in claims 12 and 13 except for a pad provided between the panel guide and the backlight assembly.

As shown in Figs. 7 and 8, Muramatsu et al. discloses a liquid crystal display device comprising a liquid crystal panel 10, a pad 45 provided between a light guide (below the liquid crystal panel) and a panel guide 100 having a depression 101a therein for receiving the pad for protecting the liquid crystal display panel from external forces (col. 1, lines 47-51 and col. 2, lines 57-63), wherein the pad is made of elastic material (col. 2, lines 29-32) and is removed and discontiguous from a light source.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display of Applicant's Prior Art with the teaching of Muramatsu et al. by forming a pad between the panel guide and the backlight assembly to protect the liquid crystal display panel from external forces, and hence to obtain a quality display (col. 1, lines 47-51 and col. 2, lines 57-63).

6. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (Fig. 2) in view of Plesinger (USPN 5,146,354) as applied to claims 1, 2, 5 and 7 above and further in view of Matsuda (USPN 5,929,950).

The LCD of Applicant's Prior Art (Fig. 2) as modified in view of Plesinger above includes all that is recited in claims 3 and 4 except for the pad formed of silicon resin.

As shown in Fig. 5, Matsuda discloses a pad 3a of relatively soft elastic material formed of silicon resin provided between a display device 4 and a light guide plate to protect the display device from breakage by absorbing oscillation (col. 3, lines 35-39 and 54-63; and col. 4, lines 23-34).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the LCD of Applicant's Prior Art with the teaching of Matsuda by forming a pad of silicon resin so as to absorb oscillation and improve impact resistance (col. 4, lines 32-34).

7. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (Fig. 2) in view of Muramatsu et al. (USPN 5,703,665) as applied to claims 12, 13, 16 and 18 and further in view of Matsuda (USPN 5,929,950).

The LCD of Applicant's Prior Art (Fig. 2) as modified in view of Muramatsu et al. above includes all that is recited in claims 14 and 15 except for the pad formed of silicon resin.

As shown in Fig. 5, Matsuda discloses a pad 3a of relatively soft elastic material formed of silicon resin provided between a display device 4 and a light guide plate to protect the display device from breakage by absorbing oscillation (col. 3, lines 35-39 and 54-63; and col. 4, lines 23-34).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the LCD of Applicant's Prior Art with the teaching of Matsuda by forming a pad of silicon resin so as to absorb oscillation and improve impact resistance (col. 4, lines 32-34).

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (Fig. 2) in view of Muramatsu et al. (USPN 5,703,665) as applied to claims 12, 13, 16 and 18 and further in view of Kawano et al. (USPN 6,195,141 B1).

The LCD of Applicant's Prior Art (Fig. 2) as modified in view of Muramatsu et al. above includes all that is recited in claim 17 except that the second and third pads are not formed on both sides of the printed circuit board.

As shown in Fig. 3, Kawano discloses a LCD device comprising a liquid crystal panel 7 and a printed circuit board 6 which is securely held between a lower cover 14 and an upper cover 17 through buffer members 20. Kawano teaches that the buffer members are made of elastic material to prevent shock impact from damaging the connection between the printed circuit board and the liquid crystal panel, and hence the

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contents of display can be surely display on the liquid crystal panel (col. 2, lines 19-28; col. 3, lines 41-44).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the LCD device of Applicant's Prior Art with the teaching of Kawano by forming a second silicon pad provided between the main frame and the printed circuit board to maintain a distance between the main frame and the printed circuit board and a third silicon pad provided between the printed circuit board and the bottom case to maintain a distance between the printed circuit board and the bottom case so as to secure the printed circuit board in place and also prevent shock from affecting display quality.

Response to Arguments

9. Applicant's arguments filed August 17, 2004 have been fully considered but they are not persuasive.

With respect to claims 1 and 7, Applicant argued that Plesinger does not teach or suggest a pad provided between the panel guide and the backlight assembly; instead, the pad 146 is provided between the metal frame 118 and the heat fin member 144 and directly above the lamp 100 as shown in Fig. 3. The Examiner disagrees with Applicant's remarks because Plesinger discloses that the metal frame 118 is used for enframing the LCD panel (col. 4, lines 29-33), thus it is served as a panel guide to support the liquid crystal panel, and as clearly shown in Fig. 3, the pad 146 is formed offset and discontinuous from the lamp 100 (or not directly on the lamp) by a heat insulating material 110 and the heat-fin member 144, and maintains a distance between

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the panel guide 118 and the backlight assembly including the lamp 100 and the light guide 104.

With respect to claim 12, Applicant also argued that Muramatsu does not teach or suggest a "pad" provided between the panel guide and the backlight assembly. The Examiner disagrees since Applicant's Prior Art in view of Muramatsu discloses a similar structure of claim 12, where a pad 45 of Muramatsu is a protrusion (or interposing member) formed of elastic material between the panel guide and the backlight assembly as shown in Fig. 7 (col. 2, lines 20-32).

Finally, the reference of Kawano is employed for teaching second and third pads for securing the PCB and prevent shock from affecting display quality. It is noted that in combination with Kawano, the pad of Plesinger is considered as a first pad.

Conclusion

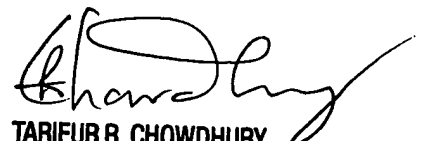
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (571) 272-2293.

Thoi Duong



10/26/2004



TARIFUR R. CHOWDHURY
PRIMARY EXAMINER